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Teamwork
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U.S. ARMY SAFETY CENTER

Safety Training Course

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SECTION I

WHY SHOULD YOU CARE ABOUT SAFETY?

A HUMANITARIAN PART OF YOUR JOB

As a supervisor it is part of your job to operate your activity safely. This responsibility is two-fold. First of all it is an established written responsibility assigned by higher levels of management. Secondly, it is a moral obligation you owe to your subordinates. They quite literally depend on you to protect their lives and limbs from unnecessary hazard. They expect you to know the hazards and to take all necessary precautions to protect them. If you fail to do so, your failure may not only be a moral one, it may also be a legal one for which you must answer.

PRODUCTIVITY

Study after study has shown that safe operations are more productive operations. This is true because they tend to be better managed, suffer fewer job interruptions, and have more confident workers.

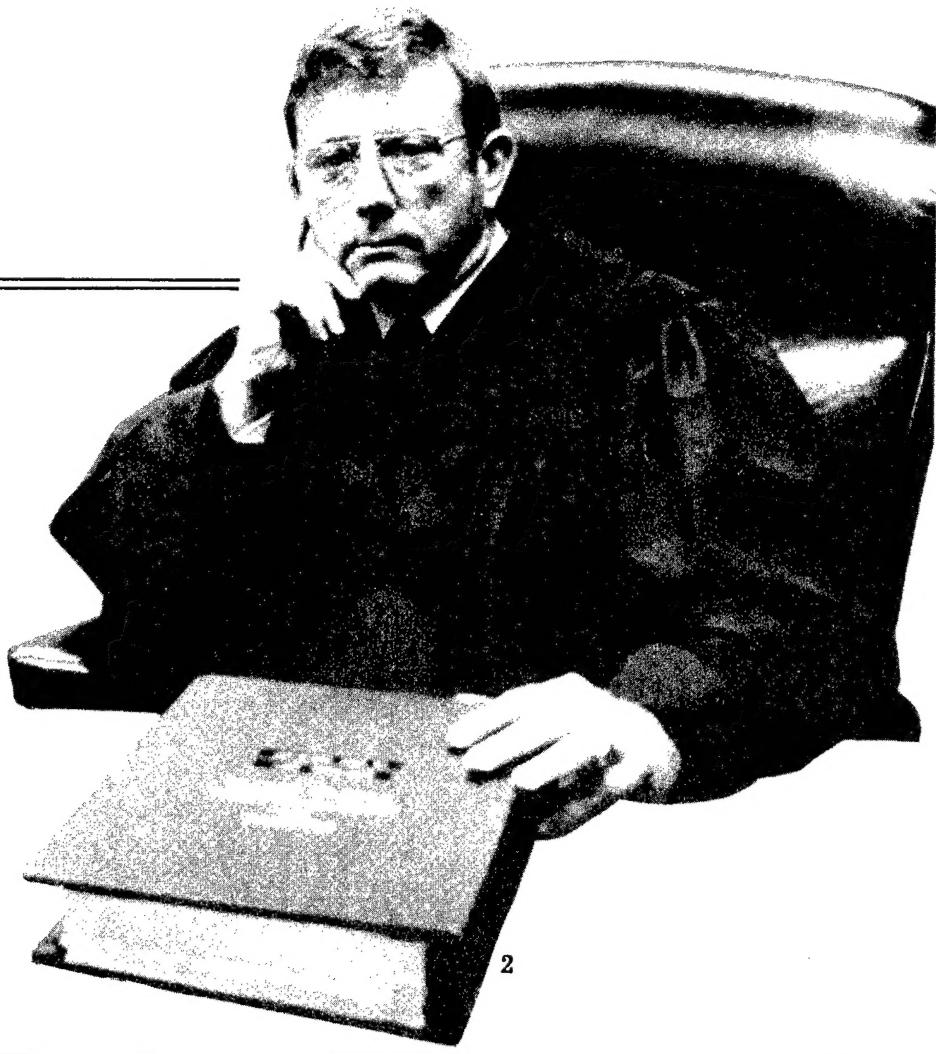


CONSERVATION OF RESOURCES

Although you might not have thought about it, you as a supervisor are frequently put in charge of government equipment and facilities worth many thousands or even millions of dollars. Preservation of those resources is clearly a supervisory responsibility and an obligation to the government. Each year millions of dollars worth of this material is lost to accidents. You as a supervisor are often in a position to prevent such losses in your operation.

PERSONAL AND ARMY LIABILITY

Accidents can result in law suits against the government and increasingly against the negligent supervisor personally. Usually the government will provide the defense in such cases, but in cases of gross or willful negligence, the supervisor may very well have to pay his own way. In any case, depositions and possible court appearances will certainly be unpleasant experiences.



PROTECT JOBS

It has not been unusual for jobs to be lost as a result of accident events. For example, a major fire or explosion may lead to a decision not to rebuild a particular facility and instead transfer the function to an existing facility elsewhere. The result can be the loss of many jobs, including the supervisory positions. It can and has happened.

In summary, as a supervisor you have an assigned responsibility for safety and a moral responsibility. You also have productivity goals, resource protection, and liability limitation needs related to safety. The remainder of this booklet is aimed at preparing you to cope with these significant responsibilities.



Match each event with one of the five reasons for a high degree of supervisory interest in safety.

EVENT

1. Army production facility or machine damage.
2. Tank fire, \$200,000 loss.
3. Government pays a \$100,000 damage claim as a result of a death to a civilian.
4. Supervisor pays a \$20,000 judgment as a result of willful negligence.
5. Explosion. Operation not rebuilt.
6. Father of four permanently disabled as a result of a preventable accident.

AREA OF SAFETY CONCERN

<input type="checkbox"/>	Humanitarian part of job.
<input type="checkbox"/>	Productivity.
<input type="checkbox"/>	Conservation of tax dollars.
<input type="checkbox"/>	Personal and Army liability.
<input type="checkbox"/>	Protect jobs.

SECTION II

HOW ACCIDENTS OCCUR

To prevent accidents it is necessary to have a good understanding of how they occur. Figure 1 depicts in diagram format the sequence of events involved in the typical accident.

The actual accident event includes, in time sequence, an operating error such as operating a machine without a point of operation guard followed by the occurrence of a mishap such as placing a hand in the point of operation of a machine and a result such as the injury to flesh or bone. Often accident investigations deal only with the accident event concentrating on what happened (mishap/result) and why (operating error). These kinds of superficial investigations have minimal usefulness and impact because they never deal with the fundamental causes of accidents. In the example outlined in figure 1, the supervisory error is allowing a machine to remain improperly guarded and failing to instruct operators not to use the machine in such a condition. Enforcing such rules is also a supervisory responsibility. Supervisors must accept the demonstrated truth that most violations of rules by operators could have been prevented by practical and prudent supervisory action. Generally speaking, operating errors are caused by supervisory errors.

Does this mean that a supervisor bears the total responsibility for the occurrence of accidents? Certainly not. As depicted in the causation model, responsibility is shared by intermediate and top echelon managers who have the

responsibility to provide a safe environment and provide the time and resources needed to train and motivate safe workers. In our example in figure 1 the manager who failed to prevent procurement of unguarded saws shares in the responsibility for the accidents that result. Managers have the responsibility for providing a favorable selection, motivation, training, task design, environmental and equipment framework within which supervisor can get the safety and production job done.

When viewed from this point of view, preventing accidents involves the active cooperation and participation of operators, supervisors, and managers. Figure 2 shows how the supervisor plays a key role in this cooperative effort because of his position in the middle. Most of management's efforts to create safe conditions must be transmitted through him while employees tend to depend on the supervisor for guidance and leadership in safety, just as they do in production.

The following example depicts this relationship between an employee's actions and possible supervisory failure.

We can conclude that most employee failures related to safety could be controlled by supervisors. It is certainly true that some failures cannot be controlled due to operational limitations or excessive cost. The supervisor's job is to insure that he is seeking, recognizing, and controlling all the hazards that he can and should.

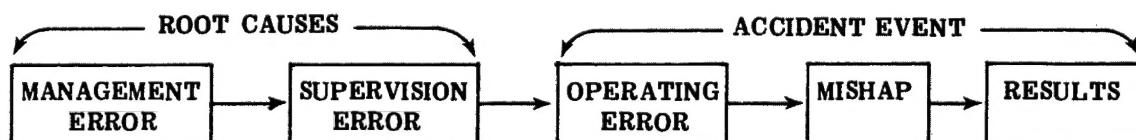


FIGURE 1.—Accident Causation Model

MANAGEMENT ←→ SUPERVISOR ←→ EMPLOYEE

FIGURE 2

UNSAFE EMPLOYEE ACTION

- Commits unsafe act through ignorance.
- Knowingly ignores a safety rule.
- Exposes self to falling hazard.
- Exposed to hazard because of physical handicap.

PROBABLE SUPERVISORY FAILURE

- Provided poor job safety training.
- Lax or gutless enforcement of rules.
- Failure to insure guard rails or barriers are in place.
- Failure to properly select and assign personnel.

A man is working on a scaffold. The scaffold has no railing or toe-board. While reaching for a brick, the man stumbles and falls 20 feet from the scaffold to the ground, breaking a leg.

1. What is the result in this situation? _____
2. What is the mishap in this situation? _____
3. What operating errors appear to have existed? _____
4. What supervisory errors may have contributed to this result? _____
5. What management errors may have played a role in this situation? _____

SECTION III

LOOKING FOR THE HAZARDS

There are three basic techniques for seeking out hazards:

- Look for them everyday as you supervise.
- Look for them during formal safety inspections.
- Look for them while analyzing individual jobs or accident events.

FIRST TECHNIQUE	Spot Check
	Periodic Inspection
	Job Safety Analysis
	Accident/Incident Analysis

The supervisor should request periodic safety inspections by the installation safety office, but he must also contribute to the effort. A technique we call spot check has been developed to enable a supervisor to integrate the search for hazards into his everyday supervisory activity. Spot checks consist of these steps:

1. Decide—Decide to make an observation.
2. Spot Check—Look for any improper procedures or conditions in the area.
3. Correct—Correct any operating errors observed. Correct the immediate problem and seek

ways to prevent recurrence.

4. Report—Use a notebook, form, or other media to record the problem for followup by your self or higher levels of management.

Supervisors are paid in part to find operating errors that have accident producing potential. The spot check method is a good way to do this. A supervisor who fails to decide to spot check operating errors and who fails to act on these observations is not doing his job and is leaving himself and the Army open to accidents . . . decreased productivity . . . blame . . . mission loss and potentially even a catastrophe that could cost his job or life. It begins with the decision to spot check.

FACTS

- If you don't decide to look, then you won't spot check.
- If you don't spot check, you won't find the problems.
- If you don't find the problems, you won't be able to act.
- If you don't act, nothing changes and the operating errors continue to hurt your operation.

SECOND TECHNIQUE	Spot Check Periodic Safety Inspection Job Safety Analysis Accident/Incident Analysis
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Periodic safety inspections have a key role. These inspections provide for an in-depth periodic review of the safety program situation and can include both hazards and program status. There are four important stages in conducting an effective periodic safety inspection program.

1. Target
2. Prepare checklist
3. Execute inspection
4. Remedial action

Let's look first at the question of TARGET. As a general rule we want to focus our inspection effort on the places where we can expect to have the most serious accident prevention problems. How can we identify these areas? Here are some things to keep in mind:

Maintenance activities? Off-duty activities?
Checked the accident case files?
1. Where have you had accidents or close calls in the past? List some areas here. _____

Weapons? Cutting edges?

2. Where do you have energy sources (voltages, heights, explosives, powerful motors, or machines, etc.)? List some potential areas of this kind here. _____

Computers? Costly weapons? One of a kind items? Communications equipment?

3. Areas with high value or mission-critical equipment or supplies. List such areas here.

Next we should consider CHECKLISTS. Once the priority areas are identified, a rational inspection schedule can be developed. This schedule then becomes the basis of gathering checklists to use in the inspection process. Inspections can be conducted without checklists but, generally speaking, an inspection with a checklist will be better than an inspection conducted without a checklist. There are many sources of checklists as shown below.

SOURCES OF CHECKLISTS

- The installation safety office.
- DA Pam 385-1, Unit Safety Management.
- Applicable FMs, TMs, and TBs.
- The Health and Environment Activity.
- Safety correspondence courses (AG 39, 40, 41).

INSPECTING

With a good checklist, the inspection process is pretty routine. Using the checklist as an aid but not as a rigid formula, the supervisor checks out the area. During the actual inspection, the wise supervisor takes the time to stop and converse with a sampling of his subordinates about the safety situation. Often a few moments spent in open conversation with employees will yield as much information about safety problems as the rest of the inspection.

THE FOLLOWUP

Once the inspection is completed, it is important to promptly follow up on each problem area revealed. Facility Engineer work order requests, contact with the safety office, self-help, special training, or other appropriate remedial actions should be started as soon as possible. If checklists have been used, they make an excellent record of the inspection that can be reviewed periodically to assure that corrective action is proceeding properly. The supervisor should not hesitate to seek the help of the post safety office when problems are not being satisfactorily resolved by supporting activities. The safety office has a trained staff to help in all types of cases.

Indicate for each of the activities below the phase of the inspection process with which it is most closely correlated.

1. Targeting	3. The inspection
2. Checklist development	4. The followup

THIRD TECHNIQUE	Spot Check Periodic Inspection Job Safety Analysis Accident/Incident Analysis
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The supervisor's job is to operate an activity

Job Description _____		Job Location _____	
Key Job Steps	Tools, Equipment or Materiel	Potential Health or Injury Hazard	Safe Practices, Apparel, and Equipment

FIGURE 3.—Sample Job Safety Analysis Form

that is efficient, economical, and highly productive. We have seen that to be efficient, economical, and productive means in part to be safe. A technique that many supervisors are using is called the Job Safety Analysis. This technique is very compatible with several of the methods improvement techniques taught in MAP-TOE (Management Practices-TOE Units) and MAP-TDA (Management Practices-TDA Units) instruction and outlined in DA Pam 5-3, Management Improvement Techniques for First Line Supervisors. Figure 3 depicts a form used in conducting a job safety analysis. The form is self-explanatory as is the method. Supervisors using the techniques they learned in MAP training or other methods improvement classes will find the job safety analysis particularly compatible with the use of the Activity List (DA Form 3818) and the Task List (DA Form 3819) on pages 8 and 9. Those familiar with Flow Process Charting will recognize the consistency of that technique with Job Safety Analysis.

Take a moment to study the JSA form. There are several advantages to using the Job Safety Analysis technique.

- It is systematic and thorough.
- It provides a permanent record of the safety situation.

■ It produces a protective equipment list and step-by-step safe job procedures.

■ It takes a little time, but only ONCE!

Using the blank form below, conduct a job safety analysis of a job in your organization.

FOURTH TECHNIQUE Spot Check
 Periodic Inspection
 Job Safety Analysis
 Accident/Incident Analysis

There is one final technique available to the supervisor in seeking hazards. This is the analysis of past accident and incident experience. The most basic technique for doing this is simply to review past accident and incident reports from time to time by paging through them looking for relationships and connections. A more formal technique that may be useful in larger operations is the use of an accident/incident log. Figure 4 depicts a page from such a general purpose log. Properly used, such a log can be the supervisor's most powerful tool in correcting the weaknesses in all phases of his operations. It is surprising how easy it is to find accident problems that never would have been found by any other technique. Consider the possibility of making a copy of the log and trying it out for a month or two. It will produce results.

ACTIVITY LIST

For use of this form, see DA Pamphlet 5-2: the proponent agency is the Office of the Comptroller of the Army.

DA FORM 1 FEB 72 3818

MAINTENANCE ACTIVITY LIST

TASK LIST

For use of this form: see DA Pamphlet 5-2; the proponent agency is the Office of the Comptroller of the Army.

DA FORM 3819
1 FEB 72

MAINTENANCE TASK LIST

FIGURE 4.—Accident Analysis Sheet

CONCLUSION

It has been said, "Seek and you shall find." Seeking in the context of accident prevention is the essential first step. If a supervisor doesn't seek the accident causing problem areas, he certainly won't find them until AFTER an accident occurs. Failing to find them, he will fail to

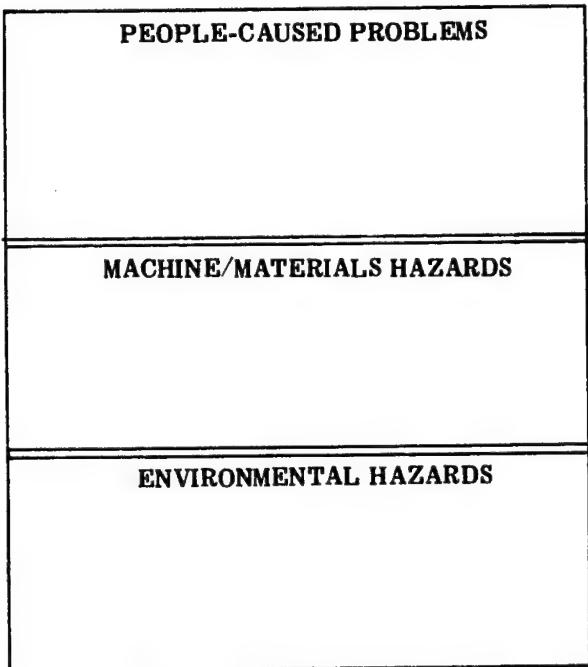
correct them and his operation will suffer accidents, production impairments, and related output problems. The program of seeking techniques outlined above has been carefully designed to assure that the supervisor will know what is happening in his activity.

TO FIND YOU MUST LOOK—

SECTION IV

RECOGNIZING THE HAZARDS

Looking to find the hazards is the first step, but it is of little value unless the supervisor can recognize the hazards that may exist in the workplace. This section provides some practical guidance on spotting these kinds of hazards. We will focus on the hazards that people create through their actions, the hazards that originate in unsafe equipment or materials and the hazards that can exist in the environment, such as noise, gases, and poisons.



THE HAZARD SPECTRUM

Let's look at each area separately since each one poses special problems.

People-Related Hazards

Machine/Materiel-Related Hazards
Environmental-Related Hazards

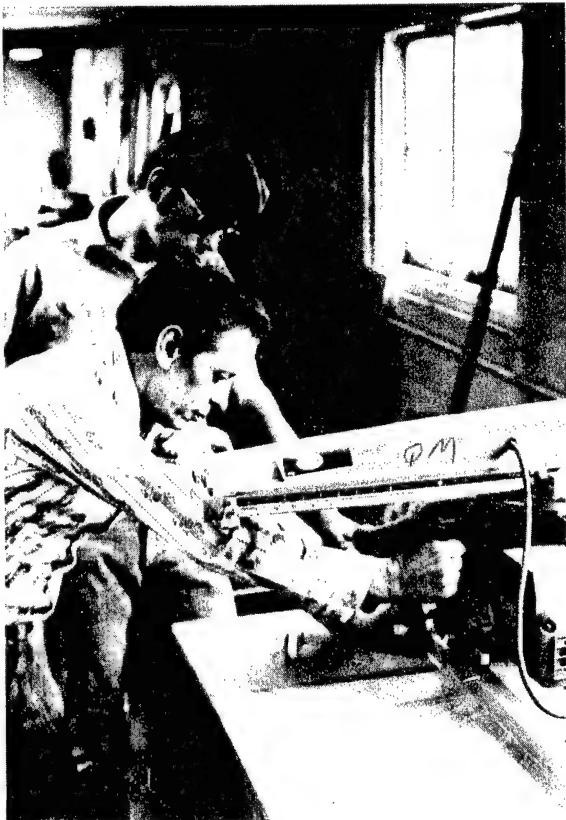
Operating errors by people are called unsafe acts. They involve acts that threaten the safety of the individual committing them or the safety of others. Figure 5 depicts a listing of various categories of unsafe acts. When an unsafe act is observed, the supervisor should next determine why the act occurred. Does the person lack the motivation to perform safely? Does he lack the

physical, emotional, or intellectual ability to perform safely? Does he lack the training to perform safely? If problems do exist in these areas, the supervisor must determine why and see that remedial action is taken. The key point to remember is: People act the way they do for a reason and managers and supervisors have more control over those reasons than is generally conceded.

- Operating without authorization.
- Operating too fast or too slow.
- Standing under suspended load.
- Standing between moving objects.
- Failing to wear protective equipment.
- Operating under the influence of drugs or alcohol.

FIGURE 5.—List of Unsafe Acts

Photo below depicts an unsafe act—operating equipment without safety goggles.



Observe the photo below and make an analysis like the one above in the space provided:



SPACE FOR STUDENT ANALYSIS

Man-Related Hazards

Machine/Materiel-Related Hazards

Environmental-Related Hazards

Materiel-related hazards are connected with energy sources such as electricity, chemical energy (i.e., explosives), and so on. Displayed

below are the major energy sources and the cues a supervisor can use to detect their presence. It is energy applied where it does not belong that causes injuries. If you know where potentially dangerous energies are, you can then concentrate on controlling them.

MAJOR HEADING	TYPES	CUES

When in doubt about the extent of hazards associated with energy sources, the supervisor should contact the supporting safety office for advice. Look at the photos and list the materiel related hazards you might want to evaluate to assure safe conditions.



Man-Related Hazards

Machine/Materiel-Related Hazards

Environmental-Related Hazards

Coal dust, asbestos particles from brake linings and other sources, vinyl chloride from aerosols, the solvent trichlorethylene—each of these materials common to various work environments has the ability to kill or disable Army employees. Indeed, nationwide, an estimated 100,000 workers die every year from occupationally induced diseases, especially cancers. In many cases the detection of these dangerous environmental hazards require sophisticated equipment and special skills. However, many environmental hazards can be detected by the alert supervisor. Once the possibility of such hazards has been established, experts can be called in to make measurements and provide recommendations for control if needed. Some of the situations most likely to create environmental hazards are listed on the following pages. The list is lengthy and gets longer as research continues to find new problems. It takes a little effort to go over the list, but the supervisor must be alert to such hazards or he and his workers may be literally dying slowly each day they work at their jobs. There have been many such tragedies that occurred because no one detected the hazard or thought to have it evaluated. As a result, after 10, 15, or 20 years of exposure, virtually all employees in some of these operations developed occupational diseases that killed or disabled them. The first line of defense against such results is you, the alert supervisor. Look over the material on the following pages carefully and get support if you suspect the possibility of environmental hazards in your operations.



HOW TO RECOGNIZE DIFFERENT HEALTH HAZARDS

Recognition and evaluation of occupational hazards must both occur before control measures can be started. Proper control can be assured only by means of an industrial hygiene survey of the environment to determine the magnitude of the hazard and a resurvey to determine the improvement accomplished and the need for further correction.

In most processes, many hazards exist together. Hence, one must carefully examine the overall process if he is not to miss potentially hazardous conditions.

There are a variety of types of processes which should arouse immediate suspicion of a health hazard (unless there is specific information that a process is properly controlled). Some of these are:

- Any process involving burning or heating should be looked at to determine what byproducts of the combustion may be released to the environment and how high the burner noise may be. Carbon monoxide, metal fumes, toxic gases are all possibilities. Have any workers complained of unexplained physical symptoms?

- Any process involving high temperature, with or without combustion, should be questioned as to the possibility of excessive heat on the employees, either as the result of high temperatures or of excessive radiant heat.

- Any process involving induction heating, including microwave, should be questioned as to heating effects on the employees and as to noise levels, including ultrasonic effects. Over periods of time, microwave and radar radiations can "cook" human flesh and significantly impair eyesight.

- Any process involving the melting of metal should be studied for toxicity of the metal fume or dust produced. These fumes and dusts can cause cancer or destroy internal organs such as the liver, lungs, and kidneys.

- Any process involving an electric discharge in air should be examined for the possibility of production of ozone and oxides of nitrogen. If it is an arc or spark discharge, the eye damage of the radiation from the flame and the products of destruction of the electrodes should be investigated. Processes of this sort also commonly involve hazards of high potential.

- Any process involving an electric discharge in vacuum is apt to be a source of ionizing radiation and to involve high potential. Such processes include all high-powered oscillating circuits, x-ray units, electron beam equipment, and similar devices.

- Grinding or crushing of any material involves the hazard of dust of the material being treated and of the grinding materials.

- Conveying, sifting, sieving, screening, or bolting of any dry material presents a dust hazard. Dust levels are strictly limited by law.

- Mixing of dry material presents a dust hazard.

- Mixing of wet materials presents possible hazards of solvent vapors, mists, possible dust and noise.

- Wet grinding of any material will have possible hazards of mist, dust and noise.

- Dry grinding operations, including milling and sand blasting, should be examined for dust and noise hazards.

- Cold bending, forming or cutting of metals or nonmetals should be examined for hazards of contact with lubricant, inhalation of lubricant mist, and excessive noise.

- Hot bending, forming or cutting of metals or nonmetals may have the hazards of lubricant mist, decomposition products of the lubricant, contact with the lubricant, heat (including radiant heat), noise and dust.

- Handling of small parts presents hazards of repeated motion and mechanical shock.

- Coating operations, generally preceded by solvent degreasing.

- (1) Electroplating-toxicity of the various metallic salts, acids, and alkalis both by skin contact and by inhalation. Particularly well known are nickel and cobalt as causes of dermatitis, chromium for production of nasal ulcers and cancers, and alkaline cleaning baths as irritants to eyes and upper respiratory system.

- (2) Painting should be examined for the possibility of hazards from inhalation and contact with toxic and irritating solvent and inhalation of toxic pigments.

- (3) Ceramic coating presents the same hazards of toxic pigments as painting plus hazards of heat from the furnaces, and from the hot ware.

- (4) Mechanical coating with metals presents hazards of dust and fumes of metals and fluxes

in addition to heat and radiation.

- Explosive processing will involve gases from the explosive, largely carbon monoxide and oxides of nitrogen and dust from the material being processed.
- Warehousing should be checked for carbon monoxide and oxides of nitrogen from material handling vehicle exhausts.

RECOGNIZING HAZARDS THAT THREATEN DAMAGE OR MISSION IMPAIRMENT

The supervisor is not only responsible for the welfare of his subordinates, he is also responsible for preventing damage to government equipment and facilities and for protecting the continuity of the mission he is responsible for. The techniques regarding seeking and recognizing are much the same as for injury prevention, but the supervisor must be aware of mission and damage aspects. The photos at right illustrate the kind of things that supervisors must keep in mind in meeting important damage control and mission protection responsibilities.

List some mission protection considerations and some of the high dollar value equipment or facilities involved in the activity you supervise.



KEY MISSION ELEMENTS (Machines, People, Facilities Which if Damaged Would Reduce Mission Effectiveness Substantially)		KEY HIGH VALUE ITEMS (Machines, Facilities, or Supplies That if Damaged Would be a Costly Loss)	
ITEM	POSSIBLE THREAT	ITEM	POSSIBLE THREAT

SECTION V

CONTROLLING THE HAZARDS

WHICH DO YOU DO AND HOW?

- Correct the problem yourself on the spot.
- Refer the problem to a staff agency via work orders or written request.
- Get outside advice.
- Do nothing.

Which action is the best? Obviously it depends on the hazard and the situation. In certain highly peculiar cases it may even be preferable to do nothing for a short period of time. Let's look at these various alternatives.

■ Correct the problem yourself by on the spot correction.

There are three basic things a supervisor can do to control accidents in his own activity. These are:

Educate & Train Motivate Engineer

EDUCATE & TRAIN

There are at least five aspects to an effective safety training and education program:

1. The supervisor must prepare himself for his safety duties.
2. He must provide an initial safety orientation for employees.
3. He must conduct remedial safety training as needed.
4. He must update safety training as needed.
5. He must conduct sustained safety training.

Prepare Self. A supervisor is presumed to be an expert in the area he supervises. His range of expertise should obviously include safety expertise. Completion of this booklet should provide an excellent fundamental introduction to safety responsibilities in a general sense. In some areas of activity such as hospitals and certain industrial activities, there are excellent specialized safety courses for supervisors. The installation safety office can provide information on these courses. In most areas, however, the supervisor will have to gain such information by digging it out of standards, field manuals, and

related standard establishing material. The installation safety office can be of great assistance in providing material and guidance. No supervisor is a fully competent supervisor until he is qualified to insure safety in the activities he supervises.

Initial Safety Orientation for Employees. This kind of orientation is fundamental to the safety of an organization. In this initial effort the employee must learn the requirements of the overall installation safety program, including his own responsibilities. Usually the installation will provide this kind of training and the supervisor will not be directly involved. The employee also needs to know specific safety procedures for his particular activity and job. Only the supervisor is in a good position to provide that kind of information. Such on-the-job safety orientations should include:

- An orientation on safety rules with an explanation of the value of each.
- Briefings on specific potential hazards and controls for those hazards.
- Emergency and first aid procedures.
- A safety oriented walk-through of the job steps.

To do an effective job in giving an orientation of this kind, the supervisor must know the job thoroughly. The JSA technique previously discussed is excellent in gaining the kind of in-depth data needed for an effective orientation. Figure 6 depicts a model job safety orientation record form that supervisors may desire to keep to document the orientation procedure. Such a form is an excellent way to insure complete coverage during the orientation process and may be useful as evidence of supervisory competence in the event of accidents.

Remedial Safety Training. Remedial safety training is just what it says—training designed to remedy some weakness or oversight in previous training. It can be directed at an individual or group as needs dictate. The key to successful remedial training is to make sure that the training is directed at actual training problems. Avoid

JOB SAFETY ORIENTATION FORM

EMPLOYEE'S NAME

WORK SECTION

DATE

SUPERVISOR

Initial

- _____ 1. This employee has been oriented on procedures to be followed in the event of an earthquake, fire, tornado, or electrical storm.
- _____ 2. This employee has been oriented on the potential hazards associated with his job. He has demonstrated the ability to do major job requirements safely.
- _____ 3. This employee has been oriented on the correct procedures for accomplishing aspects of his job that may involve potential hazards.
- _____ 4. This employee has been provided a copy of safety rules applicable to this organization: Yes No Not applicable
- _____ 5. This employee has been advised of the penalties imposed for either willful or careless violation of safety-related written regulations or directives.
- _____ 6. This employee has been advised of any effect his failure to adhere to established procedures may have on the safety and health of other employees.
- _____ 7. This employee has been advised of his rights and of appropriate hazard reporting channels.

Supervisor's Signature

FIGURE 6

the mistake of attempting to solve nontraining problems such as poor attitudes or weak motivation by using training. A simple method of determining whether training is needed is to ask the question, "Could the person do the job right if his life depended on it?" If the answer is yes, then the problem is NOT a training problem, it is some other type of problem. If the answer is no, then the problem IS a training or selection problem and remedial training may be needed.

Update Safety Training. The one unchangeable thing in the world is change. As an activity changes through the addition of new processes, procedures, or missions, so do safety training

needs. Initial training must be updated and existing employees need to be updated on new hazards. A good time to review updated refresher training needs is during periodic inspections.

Sustained Safety Training. All training has its maximum effect immediately after it is presented. After that, it continually loses effectiveness as the employee forgets the material. Accordingly, it is a good idea to periodically present some safety-related training covering particularly important safety problems. In this way, the most important safety-related procedures can be stressed and reinforced. To avoid repetitiveness and boredom on the part of the employee

the supervisor can present such training using a variety of media. Figure 7 depicts the alternative media a supervisor might use to stress safety in the important areas of lifting.



FIGURE 7

MOTIVATE

The second tool available to the supervisor is MOTIVATION. Why does an employee follow some rules established by management or supervisors and not follow others? The answer to this critical question can be found by understanding how people are motivated. Figure 8 depicts how a supervisor can motivate employees to perform safely. By using this procedure, safe productive behavior can be maximized while dangerous or unproductive behavior is minimized. Figure 9 depicts this theoretical model applied to a practical problem.

TASK DEFINITION: Define what safety-related duties each subordinate will perform that have safety significance. Thinking through the job steps either informally or using the JSA will usually reveal the key safety points.

TASK ASSIGNMENT: See that each employee knows what his safety-related tasks are. The

1 DEFINE KEY TASKS RELATED TO SAFETY

2 ASSIGN TASKS

3 ESTABLISH ACCOUNTABILITY

4 REWARD OR PUNISH

1. What things must be done to operate safely.
2. Make sure someone is responsible for performing key tasks correctly.
3. Check up to see that tasks are accomplished.
4. Reward those who do well and provide incentives for those who do not meet the standard.

FIGURE 8.—Motivation in Theory

best media for this is some written format such as a rule book, an SOP, or a job step description.

ACCOUNTABILITY: Decide what level of performance is required of the employee. Generally speaking, as long as they are not unreasonable high standards are better than lower standards. The employee is generally willing to do what the supervisor demands if it is fair and reasonable. For many tasks such as following safe procedures, making operational checks, performing periodic maintenance, a performance level of nearly 100 percent is reasonable. Next decide how performance will be measured. Spot-check or periodic inspections are excellent opportunities for measuring performance. For each task, designate a standard and specify a means of determining performance.

REWARDS AND PUNISHMENT: On the foundation of well defined tasks, performance standards and performance monitoring, it is possible to reasonably and fairly allocate rewards and punishments on an objective basis. The result of adequate rewards will be the desired behavior.

SAFETY OBJECTIVE—Assure employees use protective equipment.

TASK DEFINITION—Establish specific areas and/or operations. Specify hard hat areas, eye protection areas and noise hazardous areas, etc.

TASK DEFINITION—Provide the most comfortable, easy to maintain equipment. Many men will strike or quit before wearing irritating equipment. Avoid equipment that unduly reduces efficiency.

TASK ASSIGNMENT—Put protective equipment requirements into job and process SOPs. Make it a part of the job.

TASK ASSIGNMENT—Require use of the equipment as a condition of employment. The employee learns use of the equipment just like he learns any other aspect of the job.

TASK ASSIGNMENT—Train and educate users. Teach the man why use is necessary for his benefit and to comply with the law. Teach him how to wear and properly maintain the equipment. Use sustained training to insure he remembers.

TASK ASSIGNMENT—Insure that equipment is readily available when needed. The man is not likely to walk 50 yards or wait five minutes to get a pair of goggles for a special job.

ACCOUNTABILITY—Set the example. You must use the equipment without fail when exposed to the hazard.

ACCOUNTABILITY—Look for violations and for proper use. Someone must monitor performance of the task.

REWARD AND PUNISHMENT—Praise those who use the equipment. Make them feel good for cooperating. Notice them.

REWARD AND PUNISHMENT—Establish a schedule of automatic penalties for violations. Let all employees know you are serious.

FIGURE 9.—Motivation in Practice

ENGINEER

As previously pointed out, the objective of engineering is to control energy and keep it under control. The various kinds of energy have been described. There are several actions that the supervisor can take to control energies. These are depicted in figure 10. Find the general category column across the top of the page and then following that column down the page, the supervisor can choose 12 different control measures. It is always a good idea to check with the safety office or occupational health staff and get their guidance on the more significant hazards. They may have some good ideas or may provide you with standards that dictate specific control procedures. From the standpoint of your personal liability, it is wise to seek professional advice.

Indicate the appropriate control measure in each of the following cases:

■ Electrical Hazard—rechannel _____

■ Chemical Hazard—use safer form _____

■ Radiation From Microwave Oven—prevent release _____

■ Kinetic—(falling object) on man _____

**YOU CAN DO A LOT . . . BUT . . .
YOU CAN'T DO IT ALL YOURSELF!**

The supervisor is on the front lines in the accident prevention battle, but he is not without effective weapons and powerful support. His

	ELECTRICAL	THERMAL	KINETIC	CHEMICAL	RADIATION
Limit Energy					
Use Safer Form					
Prevent Buildup					
Prevent Release					
Prevent Slow Release					
Rechannel					
On Sources					
Between Source and Man					
On Man or Object					
Raise Threshold					
Ameliorate					
Rehabilitate					

FIGURE 10.—Energy and Barrier Analysis

weapons are the education and training tools, the motivation techniques and the engineering methods described above. Most experts feel effective employment of these tools Army wide could reduce Army accidents by 50 percent or more in a very short period of time.

The supervisor can't be expected to do the whole safety job himself. He needs help and help is, in fact, available. Let's look at some of these sources.

REFER THE PROBLEM TO A STAFF AGENCY

Figure 11 contains a list of the various staff sections available at the typical installation to provide various kinds of direct or indirect support to the supervisor in accomplishing his safety responsibilities. The supervisor should be quick to take advantage of these resources when they are needed. There is no reason to struggle at

activity level with a problem for which there is a responsible agency at installation level. The installation safety office is a key place to start.

GET OUTSIDE ADVICE AND COUNSEL

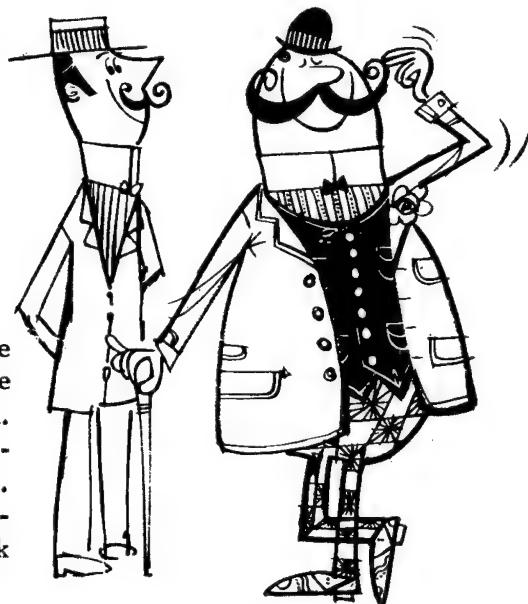
Even if there is no agency to accept the entire responsibility for a particular action, there is a good chance that some agencies can provide advice and counsel to assist the supervisor in solving his own problems. The installation safety office has special capabilities and missions in this area and should be consulted as needed.

DO NOTHING

Do nothing about safety hazards? Generally speaking, most supervisors will never experience a situation involving a safety hazard where they should do nothing. Occasionally there may be situations which warrant no action because the

SOURCE	KINDS OF INFORMATION
Installation Safety Director	Safety posters and films. Safety codes, standards, and regulations. Advice on safety demonstrations, exhibits, or exercises. Guidance on accident investigating and reporting. Guidance on operating overall unit safety program.
Transportation Officer	Selection, testing, and licensing of drivers. Training of drivers. Maintenance of vehicles. Administration of vehicle safety check programs. Safe-driver award program.
Medical Officer	Treatment of injuries (accident record). Sanitation, hygiene, and first aid. Admissions records assist in reporting lost time (accident reporting). Preventive medicine and environmental health. Physical qualification of personnel.
Personnel Officer	Assignment and transfer of men (selecting suitable jobs for men). Knowledge of physical disabilities involved in job selection.
Provost Marshal	Enforcement and discipline. Supervision of Military Police. Inspection and registration of private motor vehicles. Posting of traffic signs, signals, and markings.
Engineer	Repair and maintenance of buildings. Supervision of fire prevention activities. Provision of traffic signs, signals, and roadway markings.
Chaplain	Moral persuasion (attitude development).
Training Officer (G3)	Incorporation of safety in training methods and activities.

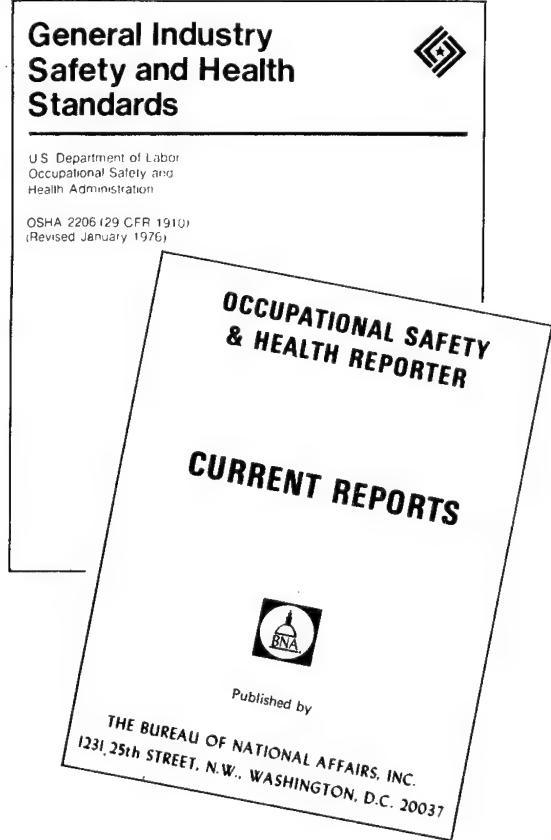
FIGURE 11.—Sources and Kinds of Specific Safety Information



chance of an accidental event is so low or the significance of any such event so slight that the cost of corrective action is simply not practical. No organization has enough money to do everything it wants to, so it must assign priorities. Most safety related problems warrant top priorities, but not all do. Use good judgment and seek the advice of experts in the field.

SECTION VI

OSHA RESPONSIBILITIES



The Occupational Safety and Health Act (OSHA) has changed many aspects of the safety program. Certainly it has increased the safety-related responsibility and accountability of supervisors. This increased responsibility stems from three major sources:

- Increasing accountability for safe working conditions. OSHA requires detailed, documented safety inspections and follow-up on violations. There have always been safety inspections, but there has not always been accountability of the kind that correctly exist under OSHA regulations.

- Increasing accountability for safe work practices. OSHA says management is responsible for seeing that workers work safely. Management assigned this job to supervisors on a day-to-day basis. When accidents occur because of unsafe acts management quite properly can point the finger at supervisors.

- Personal accountability will increase. Employees can submit complaints that bypass the supervisor. Law suits are possible from non-Army personnel and accidents will certainly result in increasingly strenuous investigations.

There are four basic supervisor-related OSHA tasks. These are listed below with a brief discussion. As has been clearly shown before, good supervision is good safety supervision and vice versa. OSHA doesn't change this conclusion in any way.

GOOD FAIR POOR

1. Exercise Rights as an Employee. Every supervisor within the Federal establishment is an employee as well as a supervisor. Thus, each has the right to exercise all the rights granted to employees by the act and standards.

GOOD FAIR POOR

2. Minimize Official OSHA Complaints from Employees. This is a task not mentioned in the standards, but one that is dictated by good management. Formal OSHA complaints involve formal investigations and formal replies. If the employee chooses to appeal to OSHA, the administrative cost of such a complaint can amount to several thousand dollars. How much better it is if the supervisors are aware of this and take special pains to get employees to report their grievances informally to the supervisor for quick action. When supervision is responsive, there is little need for expensive formal OSHA complaints.

GOOD FAIR POOR

3. Act Properly as a Management Representative in OSHA-Related Matters by Supervising in a Way That Minimizes Army Moral and Legal Liability. There is still a lot of dust in the air regarding

the legal liabilities of Federal agencies to their employees. Some recent legal decisions in the private sector have been very interesting and may apply to some extent to Federal Agencies. One of these relates to the supervisor's role as a representative of higher management. The OSHA Review Commission has repeatedly held that if management had a safety rule that was consistently enforced, a random violation detected during an OSHA inspection does not constitute a citable violation. On the other hand, where management has established a rule, but supervisors have not enforced it, all violations are citable against the employer. OSHRC has also ruled the burden of proof establishing a past enforcement pattern is on the employer. Thus, the supervisor has a key role in insuring enforcement of established company rules that implement OSHA standards. If the supervisor doesn't enforce, the commander is open to citation even though he may have established the appropriate policy.

GOOD FAIR POOR

4. Execute the Appropriate Supervisory Portion of the Compliance Effort. Supervisors may be assigned the mission of detecting and initiating corrective action on various standard violations. They may be a key element in various other OSHA compliance programs. They will need training and education, motivation, and support in executing these responsibilities which will vary from installation to installation.



SECTION VII

MEASURING PERFORMANCE

The supervisor needs to know how well he is performing his safety responsibilities. Performance can only be effectively measured if there are standards against which to measure it. In most areas of work, the highest standard is difficult to achieve. In accident prevention work this is certainly true, but the goal is definitely reachable and in many cases the acceptable goal (i.e., no accidents) is also the highest standard. The major goals that the supervisor should be pursuing in his effort to have a top quality safety program for his activity are shown below.

When these seven goals are achieved, the supervisor can be confident that he has a sound safety program and almost certainly a productive, economical operation as well. Ultimately the safety program succeeds best and produces maximum benefit when it is an integral part of the overall supervisory process. Safety is a part of the mission, a part of an efficient economical production activity whether it is an administrative office, a tank production line, or a company level tactical field exercise.

MAJOR GOAL

MY PERFORMANCE

GOAL ONE	No detected unsafe conditions. Through his own efforts and those of the installation safety office, the supervisor should be able to detect all significant standards violations and unsafe acts.	
GOAL TWO	All unsafe conditions detected have been recorded in some way and corrective actions have been initiated. The progress of these actions is being monitored.	
GOAL THREE	Key jobs have been analyzed and optimum procedures for productivity and safety have been devised and made a part of each job.	
GOAL FOUR	Employees understand safety procedures and are motivated to follow them.	
GOAL FIVE	Mission protection aspects of the program are effective. Mission threats have been identified and control measures have been provided.	
GOAL SIX	Damage control aspects of the program are effective. Damage incidents are recorded and corrective measures are being started.	
GOAL SEVEN	Supervisory responsibilities related to OSHA are being properly accomplished.	

SELF-EVALUATION CHECKLIST

1. I appreciate fully the significance of the supervisor's role in preventing accidents.
2. I also understand the role of managers and employees in the safety effort.
3. I do have some means such as spot-check to detect operating errors on a day-to-day basis.
4. I do conduct periodic safety inspections on a regular basis using checklists and other aids.
5. I use job safety analysis techniques or integrate safety into various methods improvement techniques I use.
6. I have some means of keeping a record of operating errors so I can take and monitor corrective action.
7. I know what man-related operating errors are and I am pretty good at staying conscious of them.
8. I am familiar with the ways to identify dangerous energy sources.
9. I am familiar with the cues to potential health problems in the environment.
10. I understand my damage control and mission protection responsibilities and am conscious of them.
11. I realize that I have the ability to eliminate or control many job hazards.
12. I realize that I play a central role in the safety education and training area.
13. I must provide several parts of employee safety education.
14. I understand the what's in motivating employees for safe performance.
15. I understand the ways of identifying alternative engineering solutions (Barrier Analysis).
16. I know how to get help when appropriate from outside sources.
17. I know my OSHA responsibilities and how to cope with each.
18. I understand the need for measuring my own safety performance and what the key performance standards or goals are.
19. I understand that safety is an integral part of the job that exists to protect lives, property, the mission, productivity, and the job itself. I accept my responsibility for safety in the activities I supervise.

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